

All Heaters
Part L2B Compliant



BENSON
HEATING



Technical Data – External Oil and Gas Cabinet Heaters

For Models

EVD Vertical Ducted

EHD Horizontal Ducted



Range & Configuration

Vertical Forced Draught Oil and Gas 29 kW to 381 kW
Horizontal Forced Draught Oil and Gas 58 kW to 381 kW

Specification

Cabinet: Machine punched and folded to form a robust monocoque cabinet with access to the burner and controls compartment via a front located access door. For added weather protection all external panels are manufactured from electro-zinc plated steel and then finished with stove hardened epoxy powder coat with a durable Kestrel Grey paint finish. All cabinets are IP44 rated.

Heat Exchanger: The combustion chamber/heat exchanger assembly has been designed to combine optimum thermal efficiency with extended service life. Manufactured from 304/316 stainless steel each fabricated assembly comprises of a drum type combustion chamber coupled to a tubular heat exchanger.

Burner: All oil and gas fired cabinet heaters have been carefully matched with a fully automatic packaged pressure jet oil or forced draught gas burner. Oil fired cabinet heaters are complete with factory fitted fire valve and oil filter. Models 1200 and 1300 oil and 1300 gas are fitted as standard with high/low burners. High/low and modulating gas burners are available as an option for models 200 and above.

Efficiency: Each heater within the range has been designed and developed with fuel efficiency in mind and efficiencies exceed the mandatory requirements of CE legislation. Additionally for the United Kingdom market all heater efficiencies are compliant with the needs of Part L2B of the 2006 Building Regulations whilst most models within the range have also been rated to meet the criteria necessary for inclusion into the Enhanced Capital Allowance (ECA) scheme.

Fuel: Oil heaters are design to operate on Class D light distillate 'gas oil' having a maximum viscosity of 4.5 c.St at 20°C (35 sec Redwood at 100°F). Forced draught gas heaters can be specified to operate on either natural gas (G20) or Lpg Propane (G31). Most oil fired models can be operated on kerosene.

Fan: Air movement is provided by either a single or duplex forward curved blade dynamically balanced centrifugal fan assembly complete with double inlet rotors. Fans on models 100 - 300 are powered by integral motors whilst all others employ pulley and belt drive arrangements.

Air Distribution: Air is discharged through a duct outlet spigot located on the top face of a vertical heater and on the left hand or right hand end of a horizontal heater.

Generally return air to the heaters is via a duct spigot located on either the left hand or right hand side of a vertical heater (a rear located spigot is an option for certain vertical models) or, for horizontal heaters, return air entry is on the opposite end of the heater to the duct outlet spigot. However heaters can, as an option, be fitted with fresh air inlet louvres.

Controls: Benson cabinet heaters are supplied ready for fully automatic operation and are complete with both safety and comfort controls. Each heater is fitted with a safety overheat thermostat as well as a time and temperature control system. Two alternative control options are available.

As standard, heaters are offered with a digital time switch, mechanical day temperature and frost protection thermostats. Alternatively heaters may be specified with an optimised control that includes a secure entry code facility, an optimised digital time switch with override facility, electronic day thermostat and frost protection thermostat.

Unless otherwise specified the controls for both vertical and horizontal external heaters are housed within a console for remote mounting. Inter-connecting wiring between heater and remote consoles is by others.

All heaters have the facility of 'fan only' operation for summer air movement.

Testing, Approvals & Certification: Benson Heating is accredited with ISO 9001 quality assurance certification – certificate number FM14923. All gas fired heaters have been type tested by an independent notified body and conform to CE requirements. Each heater is inspected and test fired prior to despatch.

Guarantee: Benson cabinet heaters are provided with a comprehensive package of guarantees covering both the appliance and the combustion chamber/heat exchanger, which has the further benefit of an extended guarantee. For sales within the United Kingdom the guarantee includes a 'whole appliance' twelve months parts and labour guarantee supported by a further twelve months 'parts only' guarantee whilst the combustion chamber/heat exchanger assembly has a ten year time related warranty. For cabinet heaters supplied to overseas markets please refer to the relevant country documentation. All guarantees are subject to terms and conditions.

Specification

External Vertical & Horizontal Cabinet Heaters EVD/EHD

Model			100	125	150	200	250	300	400	500	600	700	800	1000	1200	1300	
			Vertical Only				Vertical & Horizontal										
Output	kW		29	36	43	58	73	86	117	132	177	205	235	284	350	381	
ECA Approved			✓	✓		✓	✓		✓	✓	✓		✓	✓	✓		
Airside Data	Airflow	m ³ /s	0.61	0.71	0.71	1.03	1.39	1.39	2.15	2.65	3.11	3.40	4.32	4.86	6.88	6.88	
	Fan	Standard	Pa	75	100	100	125	100	100	137	150	175	188	125	175	250	250
		Static Up-rated	Pa	n/a	n/a	n/a	n/a	n/a	n/a	175	200	225	225	188	225	n/a	n/a
Electrics	Standard	V/ph/hz	230/1/50						415/3/50								
	Optional	V/ph/hz	n/a			415/3/50			230/1/50			n/a					
Overall Dimensions	EVD	Height	mm	1665	1665	1665	1915	1915	1915	2040	2040	2140	2140	2125	2125	2712	2712
		Width	mm	660	660	660	660	660	660	740	740	916	916	1100	1100	1244	1244
		Depth	mm	1165	1165	1165	1430	1430	1430	1590	1590	2200	2200	2400	2400	2550	2550
	EHD	Length	mm	n/a	n/a	n/a	1960	1960	1960	2085	2085	2185	2185	2170	2170	2757	2757
		Width	mm	n/a	n/a	n/a	1661	1661	1661	1801	1801	2456	2456	2676	2676	2816	2816
		Height	mm	n/a	n/a	n/a	750	750	750	830	830	1006	1006	1440	1440	1590	1590
Flue Diameter	mm ø	125	125	125	150	150	175	175	175	200	200	225	225	250	250		
Combustion Air Spigot	mm ø	125	125	125	125	125	125	150	150	150	150	150	150	150	150		
Noise Level	dBA	62	64	64	67	67	67	69	70	72	72	73	74	74	74		
Nett Weight	EVD	kg	230	230	230	280	280	280	380	380	595	610	720	735	1200	1200	
	HVD	kg	n/a	n/a	n/a	300	300	300	400	400	625	640	750	765	1240	1240	



Note

Where heaters are selected for the UK Enhanced Capital Allowance (ECA) scheme then they must be specified with CP4 controllers
 All models have efficiency levels which meet with the minimum efficiency requirements of UK Part L2B Building Regulations
 Air handling data is assessed at room ambient conditions
 Overall heater height excludes flue and cowl - for more detailed dimensions refer to dimensions page
 Overall dimensions model EHD include base frame.
 Noise levels are for units with both inlet and outlet ductwork attached and measured 3m from appliance

Installation

Installation Standards: Benson oil and gas fired external cabinet heaters must be installed and commissioned by a competent person and in accordance with Benson's installation and commissioning instructions, relevant local and national standards, Codes of Practice, and any requirements of Local Authorities, Fire Officer or insurers.

Siting: The position chosen for the heater will need to take account of the following points -

External cabinet heaters are specifically designed for external location and must be positioned on a flat, level and non-combustible surface. Care should always be taken to ensure that any base, platform or structural steelwork supporting the heater is structurally adequate and that there is both access and provision for maintenance purposes.

Care should be taken to ensure that the recommended clearances are maintained and that there is sufficient space for the connection of discharge and/or return ductwork or, if fitted, that there is sufficient clearance for the passage of air to the fresh air inlet weather louvre.

Consideration should be given to the location of the appliance so that the flue exit point does not discharge exhaust gases beneath or adjacent to doors, windows, building overhangs or in passageways.

So far as controls are concerned siting will often depend upon the type selected. Where controls have in-built or remote temperature sensors then consideration should be given to ensure that the sensor is located in a position which adequately reflects the working zone serviced by the heater. Sensors should not be located in areas subject to cold draughts.

In case of doubt relating to any aspect of heater or control siting please consult with Benson.

Oil & Gas Pipework: The oil and gas supply pipework should be sized and installed with due regard to all relevant standards and legislation, flow rates and the maximum/minimum inlet pressure requirements of both oil and gas fired heaters. Isolating gas cocks, oil line gate valves and service unions should be provided for each heater.

Air Supply: External cabinet heaters are designed specifically for outdoor location and as such obtain necessary combustion air directly from an external source. Care should be taken to ensure that the combustion air inlet louvre or combustion air duct (if fitted) is not modified, repositioned, damaged or in anyway restricted.

Flues: External cabinet heaters are supplied complete with a flue kit which permits the free discharge of flue gases directly to atmosphere. For particular applications it may be possible to extend the flue to enable the point of discharge to be repositioned. However should this be necessary then the diameter of flue must not be less than stated in the data sections of this brochure.

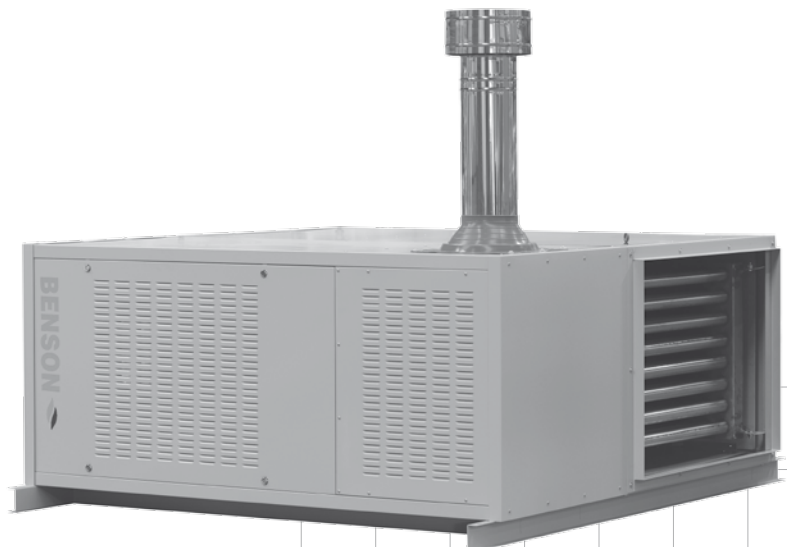
In the event that it is necessary to extend the flue then the route and exit point needs to be selected carefully and it is recommended that the installer consult the installation and commissioning instructions or Benson before commencing installation.

Further Information: The foregoing is given for guidance purposes. More detailed information can be found within the relevant installation, commissioning and servicing instructions or alternatively contact Benson.

Installation Data

External Vertical & Horizontal Cabinet Heaters EVD/EHD

Model			100	125	150	200	250	300	400	500	600	700	800	1000	1200	1300	
			Vertical Only				Vertical & Horizontal										
Fuel	Oil	BSP/Rc	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	¾	
Connection	Gas	BSP/Rc	½	½	½	½	½	½	¾	¾	1	1¼	1¼	1¼	1½	2	
Minimum Gas Inlet Pressure	Nat Gas	mbar	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	
	Lpg	mbar	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	
Fuel Consumption	Oil	l/h	3.3	4.2	5.0	6.6	8.6	10.0	13.6	15.2	20.3	24.1	27.1	33.0	37.5	44.5	
	Nat Gas	m³/h	3.3	4.2	5.1	6.7	8.5	10.1	13.6	15.3	20.2	24.3	27.0	33.0	40.7	45.8	
	Lpg	m³/h	1.3	1.7	2.0	2.6	3.4	4.0	5.4	6.0	8.0	9.6	10.7	13.0	16.1	18.1	
Electrics	230/1/50	Motor	kW	0.55	0.55	0.55	0.99	0.99	0.99	1.50	2.20	n/a	n/a	n/a	n/a	n/a	
		FLC	amp	3.2	4.8	4.8	6.0	7.2	7.2	12.0	14.0	n/a	n/a	n/a	n/a	n/a	
	415/3/50	Motor	kW	n/a	n/a	n/a	1.0	1.0	1.0	1.5	2.2	3.0	3.0	4.0	5.5	n/a	n/a
		FLC	Amp	n/a	n/a	n/a	2.2	2.2	2.2	3.6	5.2	6.5	6.5	8.4	11.0	n/a	n/a
	415/3/50 Up-rated Fan	Motor	kW	n/a	n/a	n/a	n/a	n/a	n/a	2.2	3.0	4.0	4.0	5.5	7.5	11.0	11.0
		FLC	Amp	n/a	n/a	n/a	n/a	n/a	n/a	5.2	6.5	8.4	8.4	11.0	14.0	24.0	24.0
Flue Diameter		mm ø	125	125	125	150	150	175	175	175	200	200	225	225	250	250	
Combustion Air Spigot		mm ø	125	125	125	125	125	125	150	150	150	150	150	150	150	150	
Installation Clearances	EVD	Front	mm	500	500	500	500	500	500	600	600	600	900	900	900	900	
		Side	mm	150	150	150	150	150	150	150	150	150	150	400	400	500	500
		Rear	mm	700	700	700	1000	1000	1000	1200	1200	1500	1500	2000	2000	2000	2000
	EHD	Front	mm	n/a	n/a	n/a	500	500	500	600	600	600	900	900	900	900	900
		Top	mm	n/a	n/a	n/a	150	150	150	150	150	150	150	400	400	500	500
		Rear	mm	n/a	n/a	n/a	1000	1000	1000	1200	1200	1500	1500	2000	2000	2000	2000
Nett Weight	EVD	kg	230	230	230	280	280	280	380	380	595	610	720	735	1200	1200	
	HVD	kg	n/a	n/a	n/a	300	300	300	400	400	625	640	750	765	1240	1240	



Note

Fuel consumption and output figures based upon gross calorific values as -

Class D light distillate fuel oil @ 37.9 MJ/l

Natural gas (G20) @ 37.78 MJ/m³

Lpg Propane (G31) @ 95.65 MJ/m³

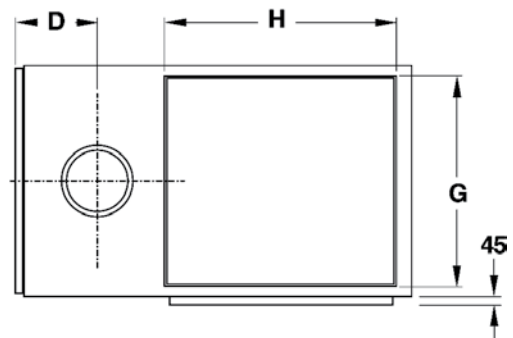
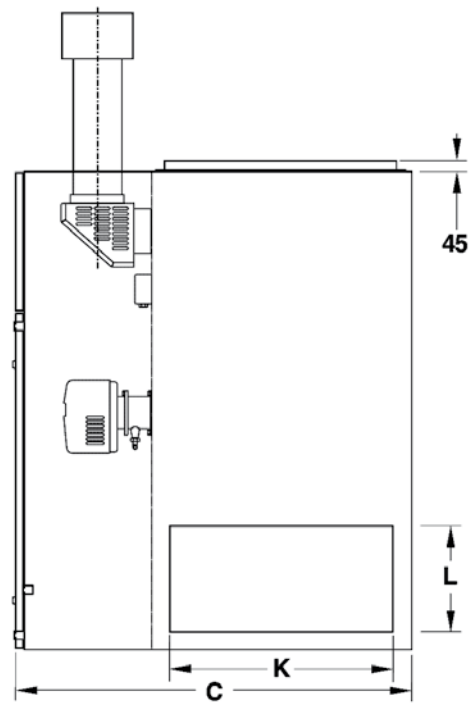
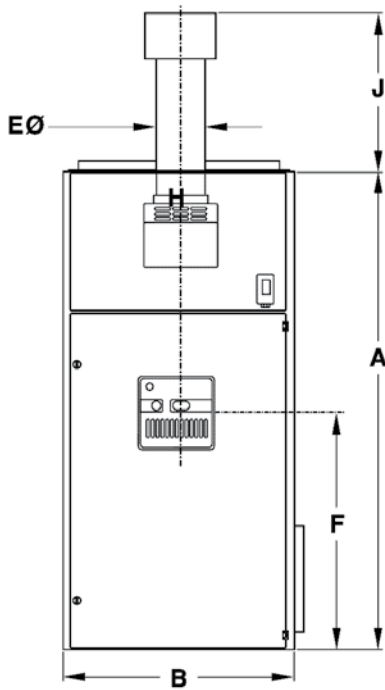
Electrics details in bold refer to standard configurations, other configurations optional

Clearances refer to heaters with standard return air louvre arrangements

Models 1200 and 1300 have an up-rated fan motor as standard

Dimensions

External Vertical Cabinet Heaters EVD



Model			100	125	150	200	250	300	400	500	600	700	800	1000	1200	1300
A	All	mm	1620	1620	1620	1870	1870	1870	1995	1995	2095	2095	2080	2080	2667	2667
B	All	mm	660	660	660	660	660	660	740	740	916	916	1100	1100	1244	1244
C	All	mm	1165	1165	1165	1430	1430	1430	1590	1590	2200	2200	2400	2400	2550	2550
D	All	mm	408	408	408	335	335	335	335	335	510	510	505	505	797	797
E	All	mm ø	125	125	125	150	150	175	175	175	200	200	225	225	250	250
F	All	mm	835	835	835	984	984	984	968	968	1068	1068	1054	1054	1372	1372
G	All	mm	570	570	570	634	634	634	714	714	890	890	1000	1000	1086	1086
H	All	mm	570	570	570	770	770	770	950	950	1120	1120	1450	1450	1365	1365
J	All	mm	640	640	640	690	690	690	770	770	945	945	1130	1130	1203	1203
K	All	mm	522	522	522	702	702	702	904	904	1078	1078	1145	1145	1150	1150
L	All	mm	348	348	348	427	427	427	542	542	692	692	654	654	796	796

Notes

Side return air inlet spigot shown is optional and can be left hand or right hand side. Side must be specified at time of order

Rear return air inlet spigot is optional and is available for certain models - details on request

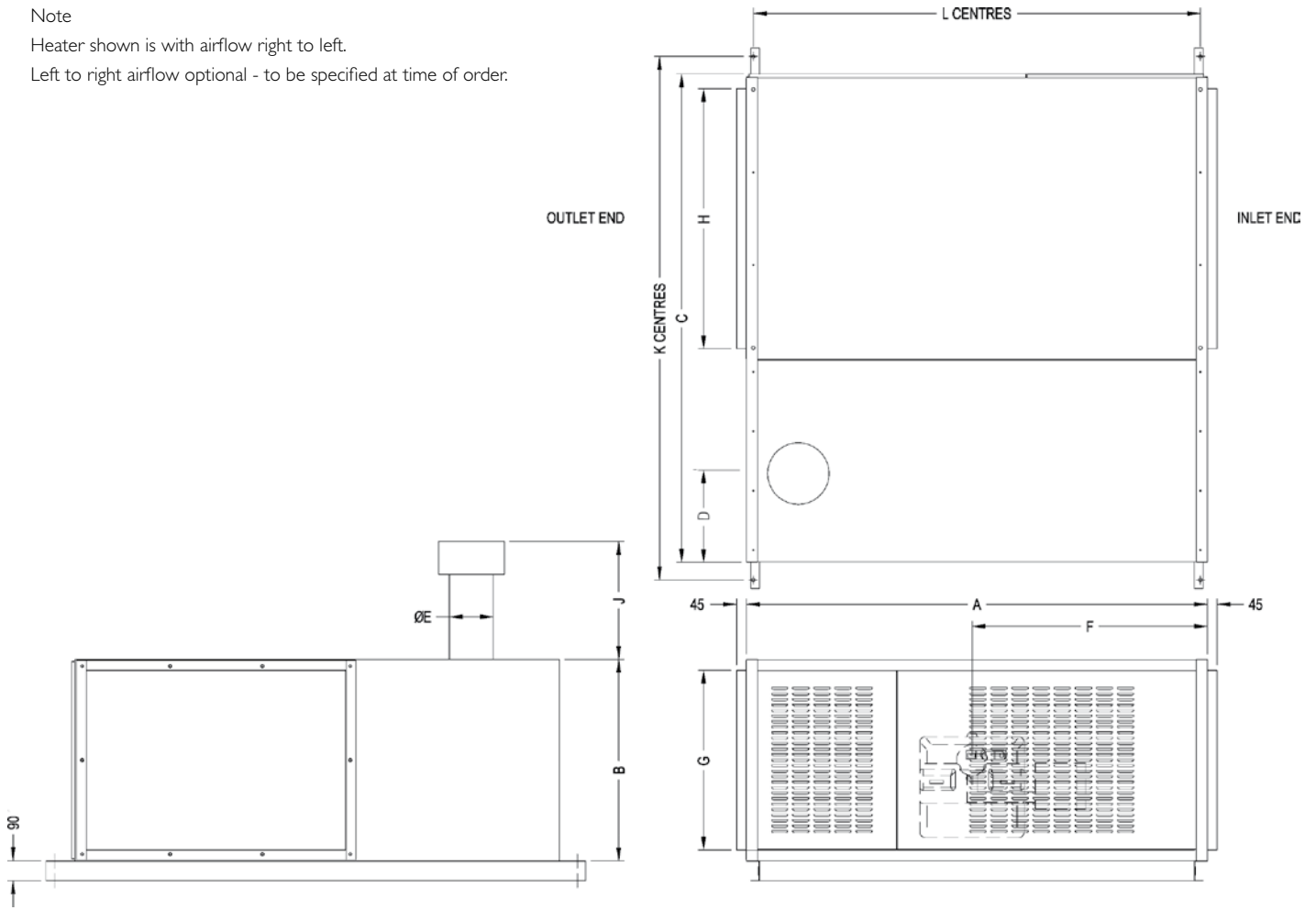
Dimensions

External Horizontal Cabinet Heaters EHD

Note

Heater shown is with airflow right to left.

Left to right airflow optional - to be specified at time of order.



Model			200	250	300	400	500	600	700	800	1000	1200	1300
A	All	mm	1870	1870	1870	1995	1995	2095	2095	2080	2080	2667	2667
B	All	mm	660	660	660	740	740	916	916	1350	1350	1500	1500
C	All	mm	1430	1430	1430	1590	1590	2200	2200	2400	2400	2550	2550
D	All	mm	335	335	335	335	335	510	510	505	505	797	797
E	All	mm ø	150	150	175	175	175	200	200	225	225	250	250
F	All	mm	984	984	984	968	968	1068	1068	1054	1054	1372	1372
G	All	mm	634	634	634	714	714	890	890	1000	1000	1086	1086
H	All	mm	770	770	770	950	950	1120	1120	1450	1450	1365	1365
J	All	mm	570	570	570	640	640	725	725	665	665	675	675
K	All	mm	1585	1585	1585	1725	1725	2380	2380	2600	2600	2740	2740
L	All	mm	1806	1806	1806	1935	1935	2035	2035	2020	2020	2610	2610



**BENSON
HEATING**

Ludlow Road
Knighton
Powys
LD7 1LP

Telephone (main) + 44 (0)1547 528534

Facsimile (main) + 44 (0)1547 520399

Telephone (sales) + 44 (0)1547 529245

Facsimile (sales) + 44 (0)1547 529195

e.mail information@bensonheating.co.uk

sales@bensonheating.co.uk

exportsales@bensonheating.co.uk



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